Reviewer's report

Title: Aortic valve stenosis after previous coronary bypass: Transcatheter valve implantation or aortic valve replacement?

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Reviewer: Dominique Himbert

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The aim of the study was to compare TAVI and AVR in 23 patients with severe aortic stenosis and previous CABG. Post-procedure outcomes were similar. There were 2 deaths after transapical TAVI and no death after either AVR or transfemoral TAVI. The authors conclude that indications for TAVI should be cautious in patients with previous CABG.

General comments

The paper addresses an interesting question, because there are very few data in the literature. However, it suffers from severe limitations, mainly due to its design and to the limited number of patients studied. The decision to send patients to either TAVI or AVR was led by several factors (mainly anatomical factors), which made the 2 treatment subsets heterogeneous and precluded any comparison. The second limitation is the small number of patients in each group (10 and 13), which made the study not powerful enough to detect statistical differences. Overall, there were 2 deaths, of which one was deemed to be the consequence of an inadequate decision, and the other was unexplained. Thus, no conclusion can be drawn from these data.

The study should not be presented as a comparison between TAVI and AVR in patients with previous CABG. Data might be presented as an evidence of feasibility of redo surgery, using an inferior T hemisternotomy, in patients with previous CABG, when the indication of TAVI is not retained, since it is in this way that the therapeutic decision was made in the study.

Finally, despite the paucity of the literature on this subject, there are several papers which have been omitted as references, which should be added and discussed (for example, Drews et al, Journal of Thoracic and Cardiovascular Surgery, 2011 – Ducrocq et al, European Journal of Cardiothoracic Surgery, - Masson JB et al, Catheter Cardiovasc Interv 2010 - Gautier M et al, EuroIntervention 2011).

Specific comments

- Throughout the text, results should probably be expressed in raw numbers, and not in percentages, due to the very small number of the patients and the low events rate.
- Page 3-4: “the impairment of LVEF was higher (49±12 vs 57±9, ns)” This is not adequate. If there is no statistical difference, it cannot be considered higher.
- Page 4: “transfusion requirement was higher.. (ns)”: idem
- Page 5: several points should be discussed:
  o The number of the patients studied is very small, and the study is not randomized. Baseline characteristics of the patients are not similar (e.g., left ventricular ejection fraction…). This precludes any comparison between both treatment groups.
  o The 2 deaths observed after transapical TAVI: the first one occurred in the most severe patient of the series (88 year-old, EuroSCORE 52%), and was probably related to an inadequate indication; there is no information about the second one (was an autopsy performed?). Thus, it seems difficult to draw any conclusion from these 2 deaths.
  o “Concomitant CAD has been demonstrated as a significant risk factor for mortality in patients having TAVI (4)”. This point remains debated, as several other studies disagree with this conclusion: for example, Masson JB et al, Catheter Cardiovasc Interv 2010;76:165-73 / Gautier M et al, EuroIntervention 2011; 7: 549-55.
  o The authors do not mention the subclavian approach as an alternative choice when the transfemoral access is not suitable. This option should probably be considered before the transaortic approach, due to its lower invasiveness.
  o A paragraph “limitations” should be added at the end of the discussion
- Several typographic errors throughout the text.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

'I declare that I have no competing interests'